

**Status Report of the Nuclear Data Project at McMaster University**  
**(April 1999 – April 2000)**  
**(Report prepared by B. Singh, April 14, 2000)**

**ENSDF RELATED ACTIVITY:**

Permanent responsibility: A= **64, 89, 98, 100, 149, 151, 164, 188, 190, 194**

The status of these mass chains in ENSDF is as follows (all published by the McMaster group).

**A=64**, NDS 78, 395-546 (1996).

**A=89**, NDS 85, 1-179 (1998)

**A=98**, NDS 84, 565-716 (1998).

**A=100**, NDS 81, 1-181 (1997).

**A=149** (Update), NDS 73, 351-556 (1994).

**A=151**, NDS 80, 263-565 (1997).

**A=164**, Complete update submitted to BNL, December 1999.

**A=188**, NDS 59, 133 (1990): High-spin update in 1995.

**A=190**, NDS 61, 243 (1990): High-spin update in 1995.

**A=194**, NDS 79, 277 (1996)

**Mass-chain/Nuclide Evaluations published/submitted since the 1999 US NDP meeting:**

**A=164**, B. Singh, NDS (Submitted December 1999)

**A=43**, J.A. Cameron and B. Singh, NDS (Submitted December 1999)

**A=163**, B. Singh and A. Farhan, NDS 89, 1-211 (2000)

**A=44**, J.A. Cameron and B. Singh, NDS 88, 299-416 (1999)

**A=75**, A. Farhan and B. Singh, NDS 86, 785-954 (1999)

**A=1**, B. Singh, Updated and included in ENSDF in February 2000.

<sup>165</sup>**Lu**, B. Singh and J. Chenkin, NDS 88, 1-78 (1999).

<sup>165</sup>**W**, B. Singh NDS 87, 635-644 (1999).

<sup>58</sup>**Cu**: B. Singh, NDS 87, 177-190 (1999).

<sup>62</sup>**Ga**: B. Singh, NDS 87, 191-196 (1999).

<sup>58</sup>**Zn**, <sup>60</sup>**Zn**, <sup>61</sup>**Zn**, <sup>62</sup>**Zn**, <sup>165</sup>**Gd**, <sup>165</sup>**Re**, <sup>165</sup>**Os**, <sup>165</sup>**Ir** nuclides:

All these were updated and included in ENSDF in June-August 1999.

**Superdeformed Bands:** Complete update of all SD band data from papers published between 1997 and 1999 was completed and included in ENSDF in September 1999.

**Review work:** **A=148** was reviewed in December 1999.

**Compilation of data from recent publications (for XUNDL):**

As part of the high-spin task force activities, about 230 compiled datasets, in ENSDF format, from recent publications in 1999-2000, primarily in the high-spin area, were prepared, edited and submitted to XUNDL database at BNL since April 1999. Another about 30 compiled datasets received from other data centers were edited/revised before including these in XUNDL.

### **Work in progress:**

**A=42** Complete datasets for all reactions.

**A=130** (selected from recent priority list).

**Superdeformed Bands:** Evaluation of SD band data from about 30 papers published since Sept 99 is in progress for ENSDF update in September 2000.

**Compilation of recent data for XUNDL:** Continued work on compilation of, primarily, high-spin data in ENSDF format from recent publications.

**Revision of rules for JPI, bands and multipolarity assignments:** D.G. Burke and B. Singh have participated actively over the past year or so in formulating revised rules for spin-parity assignments.

### **Other (data related) publications since 1999 US NDP meeting:**

#### **Magnetic-rotational bands:**

Table of Magnetic Dipole Rotational Bands: Amita, A.K. Jain and B. Singh, Atomic Data and Nuclear Data Tables (In Press, 2000).

#### **E4 transition strengths:**

Systematic Investigation of Hexadecapole Collectivity in Even-even Nuclei: R.K. Sheline, B. Singh, P.C. Sood and S.Y. Chu, Czech. Journal of Physics, 49, 1047-1066 (1999).